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## (12) United States Patent

Barman et al.

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## (54) METHOD AND APPARATUS FOR MULTI-NODAL, THREE-DIMENSIONAL IMAGING

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#### Related U.S. Application Data

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- (51) Int. Cl.<sup>7</sup> ...... G06K 9/00

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## (57) ABSTRACT

A system for localizing objects has two or more measurement units. Calibration methods provide transformations to a common reference frame by locating calibration features in local reference frames of the measurement units. A calibration target spanning measurement fields of the measurement units may be used. The measurement units may have overlapping measurement fields. The measurement units may comprise stereo vision units or other units capable of locating objects or object features.

## 55 Claims, 14 Drawing Sheets

